Geographic response strategies: Part One – Introduction

Purpose and Scope

These Geographic Response Strategies (GRS) are designed to be a supplement to the Northwest Arctic Subarea Contingency Plan for Oil and Hazardous Substances Spills and Releases, commonly referred to as the Northwest Arctic Subarea Contingency Plan (SCP). GRS provide unified (public, responders, and agencies) priorities and response strategies for the protection of selected sensitive areas to aid first responders to an oil spill. The GRS list the sensitive resources of an area and the response strategies, equipment, personnel and logistical information necessary to protect the sensitive areas. Because the U.S. Coast Guard Marine Safety Office, Environmental Protection Agency and the Alaska Department of Environmental Conservation have already approved them, the GRS serve as pre-approved strategies of the Unified Command during the emergency phase of oil spill response.

Implementation of these Geographic Response Strategies is the third phase of an oil spill response. The first and primary phase of the response is to contain and remove the oil at the scene of the spill or while it is still on the open water, thereby reducing or elimi¬nating impact on shorelines or sensitive habitats. If some of the spilled oil escapes this tactic, the second phase, which is no less important, is to intercept, contain and remove the oil in the nearshore area. The intent of phase two is the same as phase one: remove the spilled oil before it impacts sensitive environments. If phases one and two are not fully successful, phase three is to protect sensitive areas in the path of the oil. The purpose of phase three is to protect the selected sensitive areas from the impacts of a spill or to minimize that impact to the maximum extent practical.

The sites selected for development of Geographic Response Strategies are not meant to be exclusive; other sensitive sites may require protection during any given oil spill. The fact that a GRS may not have been developed for a certain sensitive site does not mean that site should not be protected if it is threatened by an oil spill.

These strategies are intended to be flexible to allow spill responders to modify them, as necessary, to fit the prevailing conditions at the time of a spill. In the arctic the seasonal constraint on oil spill operations are significant with ice and severe weather a factor for much of the year. These constraints may preclude implementation of some of the strategies. It is not intended that all the sites be automatically protected at the beginning of a spill, only those that are in the projected path of the spill. The strategies developed for the selected sites were completed with a focus on minimizing environmental damage, utilizing as small a footprint as needed to support the response operations and selecting sites for equipment deployment that will not cause more damage than the spilled oil. To test these GRS, each site may be visited and equipment deployed according to the strategy, to ensure that the strategy is the most effective in protecting the resources at risk at the site. Revisions will be made to the strategies, and this document, if changes are indicated by site visits, drills or actual use during spills.

The Northwest Arctic GRS Workgroup has divided the Subarea into 3 Geographic Response Zones (figure G-1-1) and directed that 63 sites be developed throughout the subarea. In the future, strategies may be developed for additional sensitive areas.

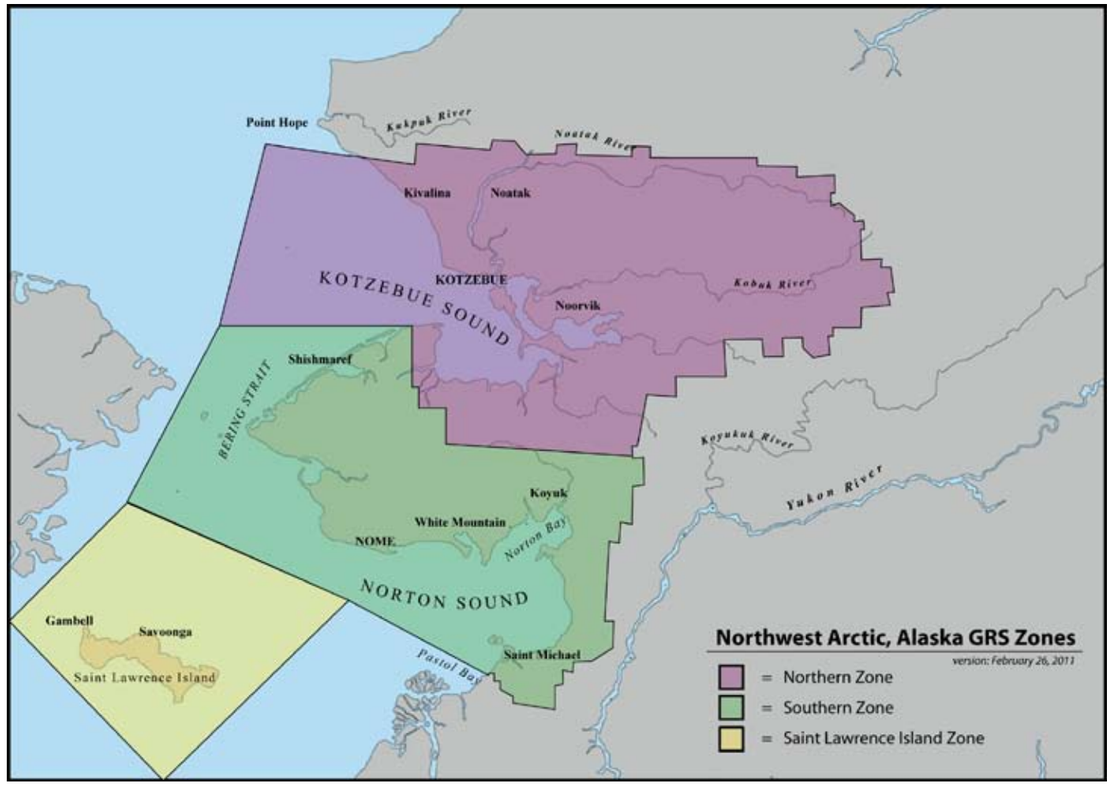

Figure G-1-1. Northwest Arctic Geographic Response Zones

How to Use These Geographic Response Strategies

The information provided here supplements information provided in the Northwest Arctic SCP and the Alaska Federal/State Preparedness Plan for Response to Oil & Hazardous Substances Discharge/Releases (commonly referred to as the Unified Plan). Information provided in either of those plans is not duplicated herein. This document is intended for use by response professionals already familiar with spill response techniques.

The GRS contain basic protection and recovery strategies with directions for implementation in the field. Each description contains the strategy objective, deployment depictions, resource sets required to imple¬ment the strategy, and deployment considerations and limitations. These general strategies may be adapted to produce a protection scheme for any site in Northwest Arctic. The strategies are taken from the State of Alaska's oil spill response tactics guide, Spill Tactics for Alaska Responders (STAR Manual). Responders should use refer to the STAR manual for more detailed information about the GRS tactics. The STAR manual, published by ADEC, is available online at: http://www.dec.state.ak.us/spar/perp/star/docs.htm.

Part 2 contains site-specific response strategies. An index at the beginning of each sub-section shows the location of the selected sites. Each GRS consists of two parts: 1) a graphic showing a map, deployment diagram, picture and implementation notes; and 2) a matrix giving the location description, response strategy, response resources, staging area, site access, natural resources being protected and special considerations.

Who to Contact for Input

Comments and recommendations on these GRS are welcomed. Please send your comments to either of the following agencies:

Alaska Department of Environmental Conservation
Prevention and Emergency Response Program
555 Cordova Street
Anchorage, AK 99501

United States Coast Guard
Captain of the Port, Western Alaska
510 L Street
Anchorage, AK 99501

How the Document Was Developed

These GRS were developed through a cooperative, workgroup process involving federal, state, and local spill response experts working citizens' groups, local governments, and natural resource agencies. Workgroups were (or will be) formed for each response zone in the subarea.

Workgroup participants identified all sensitive areas with potential to be classified as "Areas of Major Concern" under the criteria established in the Northwest Arctic Subarea Plan. These potential sites were evaluated by the additional criteria of 1) risk of being im¬pacted from a water borne spill; and 2) feasibility of successfully protecting the site with existing technology. Using this process, the workgroup selected a preliminary list of sites that was released for public input. Feedback on site selection was solicited from tribal representatives, user groups, environmental organizations and the general public. Based on the feedback received, the workgroup made the final site selections for the zone. Additional sites may be selected in the future.

A Northwest Arctic Tactics committee, composed of spill response professionals was formed to develop draft strategies for each site selected. Local input was gathered to understand local conditions that may affect response strategies. The draft strategies were reviewed and approved by the entire workgroup and the final draft was forwarded to the Northwest Arctic Subarea Committee with the recommendation that it be adopted as part of the Northwest Arctic SCP.

The Northwest Arctic Workgroup consisted of representatives from the following organizations:

Alaska Department of Environmental Conservation
Alaska Department of Fish and Game
Alaska Department of Natural Resources
Alaska Chadux Corporation
Bristrol Bay Native Association
Northwest Arctic Borough
The City of Nome
The City of Gambell
The City of Savoonga
Minerals Management Service
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
National Park Service
United States Coast Guard
United States Department of the Interior
United States Fish and Wildlife Service

The Workgroup developed Table G-1-1 to aid in the selection of sites from within the Northwest Arctic Subarea. The table consists of identified sites in each row with information about resources at each site that could qualify the site as an area of major concern detailed in the columns.

Table G-1-1. Northwest Arctic Site Selection Matrix.

Selected for GRS	Priority	Location	Latitude	Longitude	Marine Mammals	Fish	Birds	Subsistence	Cultural Resources	Comm. Fish	Coastal Habitat	Land Mgt. Designation
Northern Zone												
N-01	H	Singoalik Lagoon	67°59.36'N	165°13.62'W	PB		SHBc	B,I			LLT, M,STF	BLM,SL
N-02	H	Tasikpak Lagoon	67°56.03'N	165°06.31'W	PB	H	SHBc,WFc	B,M,I			M, STF	BLM,SL
N-03	H	Asikpak River and Lagoon	67°50.54'N	164°50.03'W	PB	H,AC	SHBc,WFc	F,B,H,M,I			LLT, M,STF	BLM
N-04	H	Kivalina River/Wulik River	67°48.13'N	164°39.91'W	PB	H,C,Co,CH,P,S	SHBc,WFc	F,B,M,I			LLT, M,STF	N, NA
N-05	H	Ipiavik Lagoon	67°37.74'N	164°09.42'W	PB	H,DV,WF,AC	SHBc,WFc	F			LLT, M,STF	BLM, N, NA, NF
N-06	H	Rabbit Creek & Imik Lagoon	67°27.91'N	163°56.73'W	PB	S,DV,WF,R,SC,AC	SHBc,WFc	F			M, LLT	NF, NA
N-07	H	Jade Creek & Kotlik Lagoon	67°20.44'N	163°48.95'W	PB	DV,WF,R,SC,AC	SHBc	F,M,I			M, LLT, GB,SRS	NF. NA
N-08	H	Cape Krusenstern & Aukulak Lag	67°09.68'N	163°43.92'W	PB	DV,H,R,SC,WF,AC	WFc, SHBc,SBn	F,M,I			TC, GB	NF, NA
N-09	H	Sheshalik Spit	67°01.45'N	162°51.74'W		DV,AC,H,R,SC,WF	SHBc,WFc, SHBc,SI	F,M,I		C	M, STF	N, NA
N-10	H	Noatak River Delta	67°00.24'N	162°29.92'W		C,Ch,DV,P,WF,AC	SBc, SHBc, WFc	M,F,B		C	M, LLT, GB, STF,SRS	N, NA
N-11	H	Little Noatak Slough	66°59.19'N	162°16.86'W	SS	C,Ch,DV,P,WF,AC	SBc, SHBc, WFc	F,M,B,I				
N-12	H	Ekichuk Lake	66°58.77'N	161°40.27'W		Ch, DV,AC	SBc, SHBc, WFc	F,B,M,I		C	M,GB,TC,EWP,EG	BLM, NA, NF, N, SNWR
N-13	H	Kobuk River Channel-barge route	66°32.70'N	161°30.82'W		C,Ch,DV,P,WF	SBc, SHBc, WFc	F,B,M,I		C	M,EWP	NF, NA,SNWR
N-14	H	Mukuksok Channel	66°37.33'N	160°10.38'W	SS	C,Ch,DV,P,WF,AC	SHBc, WFc	F,B,M,I				
N-15	H	Selawik River Delta	66°37.13'N	160°18.44'W		SF,WF	SHBc, WFc	F,B,M,I				SNWR
N-16	H	Mangoak Creek	66°25.68'N	160°14.70'W		SF,WF	SHBc, WFc	F,B,M,I				SNWR
N-17	H	Kotzebue/Pipe Spit	66°54.60'N	162°32.32'W	SS	H	WFc, SBn	F,B,M,I		C	M,GB	SNWR
N-18	H	Eschscholtz Bay/Buckland River	66°14.09'N	161°02.31'W	BW	C,Co,DV,P,WF,AC	WFc, SBc,SBn				M,SRS,GB, LLT	SNWR
N-19	H	Chamisso and Puffin Islands	66°13.01'N	161°49.78'W			SBc, SBn, WFc,SHbc				ERS,GB	BLM, NA, AMNWR
N-20	H	Kiwalik Lagoon	66°00.76'N	161°50.80'W		H,Ch,DV,	WFc,SBc, SBn	F,B,M,I			M,STF,LLT,SRS,GB	SL,NA
N-21	H	Inmachuk River/Cape Deceit	66°04.66'N	162°43.61'W		H,Ch,DV,P,R,SC,AC	WFc,SBc	F,B,I			M,LLT,ERS,GB	N, SL
N-22	H	Nugnugluktuk River & Kougachu	66°13.33'N	163°54.38'W		H,P,AC	WFc,SBn	F,B,I			M,SRS,GB	NP, NA
N-23	H	Cape Espenberg	66°31.47'N	163°42.42'W		H	WFc,SBn,SHBc,				ETF,GB,M,SRS,LLT	NP
		Pink Salmon Lagoon	67°16.10'N	163°46.04'W	PB	DV,P	SBc, SHBc,	F			LLT, M,STF	NF, NA
		Situkugok River & Lagoon	67°03.41'N	163°14.93'W		DV,R,SC,WF	SBc, SHBc,SBn	F,B,M,I			LLT, M,STF,GB	NF, NA
		Nelson Creek	67°02.51'N	161°58.57'W		Ch, DV, P, SHf, WF	SBc, SHBc, WFc	F		C	M, LLT,GB,	BLM, NA
		Melvin River	66°48.01'N	161°51.78'W		C,Ch,DV,P,SHf,WF	SBc, SHBc, WFc	F		C	M,ETF,STF,GB	N,SNWR
		Lewis Rich Channel	66°41.35'N	161°50.62'W		C,Ch,DV,P,WF	SBc, SHBc, WFc			C	M,EWP	N, SNWR
	H	Riley Wreck	66°43.75'N	162°19.79'W				F			M, LLT,GB,	N
		Choris Peninsula	66°17.78'N	161°53.33'W			SBc, SHBc, SBn				SRS,GB,M,ERS	BLM
		9 Mile Pt.-Kugruk Lagoon	66°02.81'N	162°30.14'W		H,Ch,Co,DV,P,R,SC	WFc,SBc, SBn				M,SRS,GB	N, NA
		Kitluk River	66°34.80'N	164°23.76'W	SS,PB	H,P,AC	WFc,SBc				GB	NP ,NA
Southern Zone												
S-01	H	Cowpack Inlet	66°32.30'N	164°43.46'W	SS,BS,PB	H,R,SC	WFc,SBc,SHBc	F,B,M,I			M,ETF,SRS,GB	N, NA
S-02	H	Head of Shishmaref Inlet	66°07.99'N	165°40.12'W	SS,BS,PB	H,Ch,DV,WF,SF	WFc,SBc	F,B,M,I			M,SRS,GB,EWP	N, NA
S-03	H	Arctic Lagoon	66°00.41'N	166°48.35'W	SS,BS,PB	H,DV,WF,AC	WFc,SBc	F,B,M,I			M,SRS,GB,EWP	NP, N, NA
S-04	H	Ipek Lagoon	65°54.41'N	167°07.05'W	SS,BS,PB	H,DV,WF,SC,P,AC	WFc,SBc,SHBc	F,B,M,I			M,LLT,ETF,ERS,GB	NP, NA
S-05	H	Lopp Lagoon	65°45.57'N	167°41.03'W	SS,BS,PB	H,DV,WF,SC,P,CH,AC	WFc,SBn,SHBc	F,B,M,I			M,LLT,ETF,ERS,GB	NP, N, NA, BLM, AMNWR
S-06	H	Brevig Lagoon	65°20.04'N	166°35.46'W	SS,BS	H,WF,P	WFc,SBc,SHBc	F,B,M,I			M,ETF,GB	N, NA
S-07	H	Grantley Harbor	65°16.19'N	166°20.50'W	SS, BS	CH,WF,H,P	WFc,SBc,SHBc	F,B,M,I			M,GB,ERS,STF	N, NA, BLM, M, SL
S-08	H	Cape Riley	65°13.21'N	166°28.93'W	SS		WFc,SBn,SHBc				EWP,ERS,M	N, NA
S-09	H	Jones Point	65°07.33'N	166°37.67'W	SS	H	WFc,SBc,SHBc,SBn				M,ETF,GB	N, NA
S-10	H	Golsovia River	63°33.40'N	161°02.91'W		C,CH,CO,DV,WF,P,H	WFc,SBn,SHBc,CH	F,B,I		C	ERS	BLM, NA
S-11	H	Feather/Tisuk Lagoon & Cape W	64°50.42'N	166°23.09'W	SS, BS	C,CH,CO,H,DV,WF,SC,P	WFc,SBc,SHBc	F,B,M,I			M,STF,GB	N, NA
S-12	H	Sinuk River	64°35.60'N	166°14.25'W	SS, BS	C,CH,CO,H,DV,WF,P	WFc,SBc,SHBc	F,B,M,I		C	M,GB,STF	N, NA
S-13	H	Cripple Creek & Penny River	64°32.34'N	165°49.27'W	SS, BS	S,CH,CO,H,DV,WF,P		F,B,I		C	M,GB,STF	SL
S-14	H	Snake River & Nome Harbor	64°29.66'N	165°25.48'W	SS, BS	C,CH,CO,DV,WF,P		F		C	GB,	M, SL
S-15	H	Nome River	64°29.40'N	165°18.16'W	SS, BS	C,CH,CO,H,DV,WF,P		F		C	GB,M,STF	M, SL
S-16	H	Safety Sound	64°27.77'N	164°44.08'W	SS, BS	C,CH,CO,H,DV,WF,P	WFc,SBn,SHBc	F,B,M,I		C	M,GB,STF	N, NA, BLM, AMNWR, SL
S-17	H	Solomon & Bonanza Rivers	64°32.75'N	164°25.25'W	SS, BS	C,CH,CO,H,DV,WF,SC,P,C	WFc,SBc,SHBc	F		C	M,STF,GB	N, SL

S-18	H	Golovin Lagoon Entrance	64°31.90'N	163°01.83'W	SS, BS	SC,H,WF,P	WFc,SBn,SHBc	F		C	GB,M	N, NA
S-19	H	Kwiniuk River	64°41.10'N	162°07.74'W	SS, BS	C,CH,CO,DV,WF,P	WFc,SBc	F		C	M,STF,GB	N
S-20	H	Kwiniuk Inlet	64°43.82'N	161°52.65'W	SS, BS	C,CH,CO,H,DV,WF,P	WFc,SBc,SHBc	F,B,I		C	M,GB	N, NA
S-21	H	Kwik River	64°47.68'N	161°42.48'W	SS, BS	C,CH,CO,H,DV,WF,P	WFc,SBc,SHBc	F		C	M,STF,GB	N, NA
S-22	H	Koyuk Inlet	64°53.51'N	161°10.16'W	SS, BS	C,CH,CO,H,DV,WF,P,C,SH	WFc,SBc,SHBc	F		C	M,STF,GB	N, NA
S-23	H	Inglutalik River	64°48.74'N	160°52.44'W	SS, BS	C,CH,P	WFc,SBc,SHBc	F		C	M,STF,GB	BLM, N, NA
S-24	H	Ungalik River	64°33.55'N	160°55.57'W	SS, BS	C,CH,CO,DV,WF,P,S	WFc,SBc,SHBc	F			ETF,M,STF	BLM, N, NA
S-25	H	Sineak River	64°25.24'N	161°23.81'W	SS, BS	C,CH,CO,H,DV,WF,P	WFc,SBc,SHBc	F		C	ETF,M,STF,GB	N
S-26	H	Malikfik & Shaktoolik Bay/Tago	64°22.75'N	161°15.18'W	SS, BS	C,CH,CO,H,DV,WF,SC,P,C	WFc,SBc,SHBc,CH	F,B,I		C	ETF,M,STF,GB	N, NA
S-27	H	Unalakleet	63°53.25'N	160°47.01'W	SS, BS	C,CH,CO,H,DV,WF,P,S	SBn,CH	F,B,I		C	M,ERS	SL, N, NA
S-28	H	St. Michael Bay	63°27.30'N	162°02.08'W	SS, BS	C,CH,CO,H,DV,SH,P	WFc,SBn,SHBc,CH	F,B,I			GB, M,ETF	SL, N, NA
S-29	H	St. Michael Channel & Kuiak Riv	63°23.06'N	162°26.68'W	SS, BS	C,CH,CO,H,DV,P	WFc,SBc,SHBc,CH	F,B,I			M,SRR	N, NA
S-30	H	Kogok & Pikmiktalik Rivers	63°16.23'N	162°35.79'W	SS, BS	C,CH,CO,DV,WF,P	WFc,SBc,SHBc,CH	F,B,I			M,STF,GB	N, NA
	H	Port Clarence Beach	65°11.11'N	166°56.76'W	SS							
		Sarichef Island	66°14.08'N	166°07.41'W	SS,BS,PB	H	WFc,SBn				GB,ETF,M	N, NA
		Little Diomede	65°45.52'N	168°56.79'W	PB, RS, SS,W		SBc, SBn				ERS	N
		Fairway Rock	65° 37.51'N	168°44.55'W	SS,BS		SBc, SBn				ERS	AMNWR
		Cape Prince of Wales	65°34.87'N	168°01.81'W	PB	H	WFc,SBn,SHBc,PF				M,ERS,GB	SL, N
		Cape York	65°31.90'N	167°50.87'W	PB		WFc,SBc,SHBc, PF				ERS,GB	BLM, N
		Sledge Island	64°28.56'N	166°12.68'W	W		WFc,SBn				GB,ERS	AMNWR
		Hastings Creek	64°27.11'N	165°06.67'W		DV,P	SBn			C	GB	M, SL
		Topkok Head & River	64°33.49'N	163°56.53'W	SS	P, DV	WFc,SBn,SHBc			C	M,GB,ERS	BLM, NA, AMNWR
		Bluff Point and Beach Sites	64°34.32'N	163°45.25'W			SBc, SBn				M,ERS,GB	
		Square Rock	64° 33.69'N	163° 38.02'W								
		Rocky Point	64°24.30'N	163°06.44'W	SS	H	WFc,SBn,SHBc			C	ERS	N
		Head of Golovin Lagoon	64°36.77'N	163°16.00'W		CH,CO,H,DV,WF,P	WFc,SBc,SHBc			C	M	N, NA
		Cape Darby	64°19.46'N	162°52.26'W	SS,W	H	WFc,SBn,SHBc				ERS	N
		Elim & Iron Creek	64°39.83'N	162°11.91'W		H	WFc,SBc				GB,ERS	N
		Kaiuktulik River	64°50.30'N	161°18.78'W		P	WFc,SBc,SHBc			C	M,STF,GB	N, NA
		Reindeer Cove	64°30.55'N	161°04.42'W			WFc,SBc,SHBc				M,GB,STF	N, NA
		Cape Denbigh	64°22.85'N	161°31.85'W		H	WFc,SBn,SHBc,CH			C	ERS	N
		Besboro Island	64°07.56'N	161°18.29'W	SS,RS,BS,W	H	WFc,SBn,SHBc,CH			C	ERS,GB	AMNWR
		Egavik River	64°02.15'N	160°55.63'W		C,CH,CO,H,DV,WF,P	WFc,SBn,SHBc,CH			C	M,G,ERS	N, NA
		Spruce & Point Creek	63°40.93'N	160°53.02'W		DV,P	WFc,SBc,SHBc,CH			C	ERS,GB	N, NA
		Klikitarik Bay	63°28.57'N	161°26.45'W		H	WFc,SBn,SHBc,CH			C	ERS,GB	BLM, N, NA
		Egg Island	63°36.56'N	161°44.75'W	W	H	WFc,SBn,CH			C	ERS	NA
		Stuart Island	63°34.38'N	162°28.14'W		H	WFc,SBn,CH			C		N, NA
		King Island	64°58.19'N	168°03.94'W	W		WFc,SBn,CH			C	ERS,GB	N
		Saint Lawrence Island Zone										

GRS Index #	Priority	Location	Latitude	Longitude	Marine Mammals	Fish	Birds	Subsistence	Cultural Resources	Comm. Fish	Coastal Habitat	Land Mgt. Designation
SL-01	H	Maqneq Lagoon and River	63°07.47'N	169°25.20'W	SS, BS	WF, R, SC	WFc,SBn,SHBc	F		C		N
SL-02	H	Tapisagek River & Qitnegaq Bay	63°20.12'N	168°55.89'W	SS, BS	DV,P	SHBc, Wfc,	F,B,M,I		C		N
SL-03	H	Sipenpak Lagoon	63°20.59'N	169°16.41'W	SS, BS	WF, R, SC	SHBc, Wfc	F,B,M,I		C		N
SL-04	H	Tamniq Lagoon	63°21.60'N	169°27.53'W	SS, BS	WF, R, SC	SHBc, Wfc	F,B,M,I		C		N
SL-05	H	Unguuvigaq Lagoon & Unguuvig	63°26.09'N	169°47.83'W	SS, BS	WF, R, SC	SHBc, Wfc	F,B,M,I		C		N
SL-06	H	Kangii Bay Lagoons	63°35.01'N	171°03.90'W	SS, BS	WF, R, SC	WFc,SBc,SHBc	F,B,M,I		C		N
SL-07	H	Nayghapak & Aghnak Lagoon	63°35.58'N	171°27.05'W	SS, BS	WF,DV	WFc,SBc,SHBc	F,B,M,I		C		N
SL-08	H	Northwest Cape/Gambell	63°46.98'N	171°43.08'W	W		WFc,SBc,SHBc	F,B,M,I		C		N
SL-09	H	Ketngipalak	63°34.87'N	171°49.63'W	SS		WFc,SBc,SHBc	F,B,M,I		C		N
SL-10	H	Kangqaak Bay	63°20.60'N	171°38.70'W	SS		WFc,SBc,SHBc	F,B,M,I		C		N
		Punuk Islands	63°04.56'N	168°49.41'W	SSL,W		WFc, SBc, CH			C		N
		Kiloknak Lagoon	63°10.32'N	168°49.47'W		WF,R,SC	WFc, SBc, CH	F,B,M,I		C		N

		Camp Ayvigtek	63º29.42'N	170º02.63'W		WF,DV	SBc	F,B,M,I		C		N
		Stolbi Rocks	63º38.95'N	170º03.32'W	SSL		SBc			C		N
		Kukulek Cape/Savoonga	63º41.48'N	170º24.70'W	SSL, PB, W		SBc	M,I		C		N
		Southwest Cape	63º18.50'N	171º26.81'W	SSL			M,I		C		N
		Western Naayvaghlak Lagoon	63º25.02'N	170º52.60'W		WF, R, SC, DV	WFc,SBc,SHBc	F,B,M,I		C		N
		Eastern Naayvaghlak Lagoon	63º19.36'N	170º26.22'W		WF, R, SC, DV	WFc,SBc,SHBc	F,B,M,I		C		N
		Sekeunak Lagoon	63º05.13'N	169º48.64'W	SS	WF, R, SC, DV	WFc,SBc,SHBc	F,B,M,I		C		N
		Southeast Cape	62º47.36'N	169º40.01'W				M,I		C		N
		Maknik Lagoon	63º11.77'N	169º09.73'W		WF, R, SC, DV	WFc,SBc,SHBc	F,B,M,I		C		N

Key to Site Selection Matrix Table G-1-1.

Northwest Arctic GRS
Site Selection Matrix KEY

Marine Mammals	Fish	Intertidal	Birds	Subsistence	Cultural Resources	Comm.Fish	Coastal Habitat	Land Mgt. Designation
S = Harbor Seal	S = Sockeye Salmon	I=Intertidal Resources present throughout coastal areas of the NWA.	WFc = Waterfowl concentration area	F = Fish	R = REPORT any cultural resources found during operations to FOSC Historic Properties Specialist.	C = Commercial fishing	LLT= Low lying Tundra	TL = Tidelands leases, permits, & right-of-ways
SL = Sea Lion	P = Pink salmon		SHBc= Shorebird concentration area				M= Marsh	SL=State Lands
W=Walrus	Co = Coho Salmon		SBc= Seabird Concentratio	I = Invertebrates			STF= Sheltered Tidal Flats	SP = State Park
PB=Polar Bear	C=Chinook		Sbn=Seabird Nesting	M = Marine Mammals			GB= Gravel Beaches	BO = NW Arctic Borough
SS=Spotted Seal	Ch = Chum Salmon		CH=Critical Habitat	O = Otters			RS= Sheltered Rocky Sho	CH = Critical Habitat
RS=Ringed Seal	DV = Dolly Varden Char			C=Crabs	I = FOSC Historic properties specialist should INSPECT site prior to operations.		TC= Tundra Cliffs	AMNWR = Alaska Maritime National Wildlife Refuge
BS=Bearded Seal	SC=Saffron Cod			B = birds			P= Exposed wavecut platf	N = Native owned
	H = Herring Spawning			H=Herring				S = State owned
Ringed Seals and Spotted Seals are present throughout the Subarea. Listing on the SSM indicates a high concentration area.	AC=Arctic Char							P = Private owned
	SH= Steelhead trout							BLM = Bureau of Land Mngt.
	RS=Rainbow Smelt							NWR-National Wildlife Refuge
	WF=White Fish				M = FOSC Historic properties specialist should MONITOR operations.			NP-National Park
								M= Municipal
								NF=National Forest, Monument, Recreational, and Conservation areas
								SNWR=Selawik National Wildlife Refuge